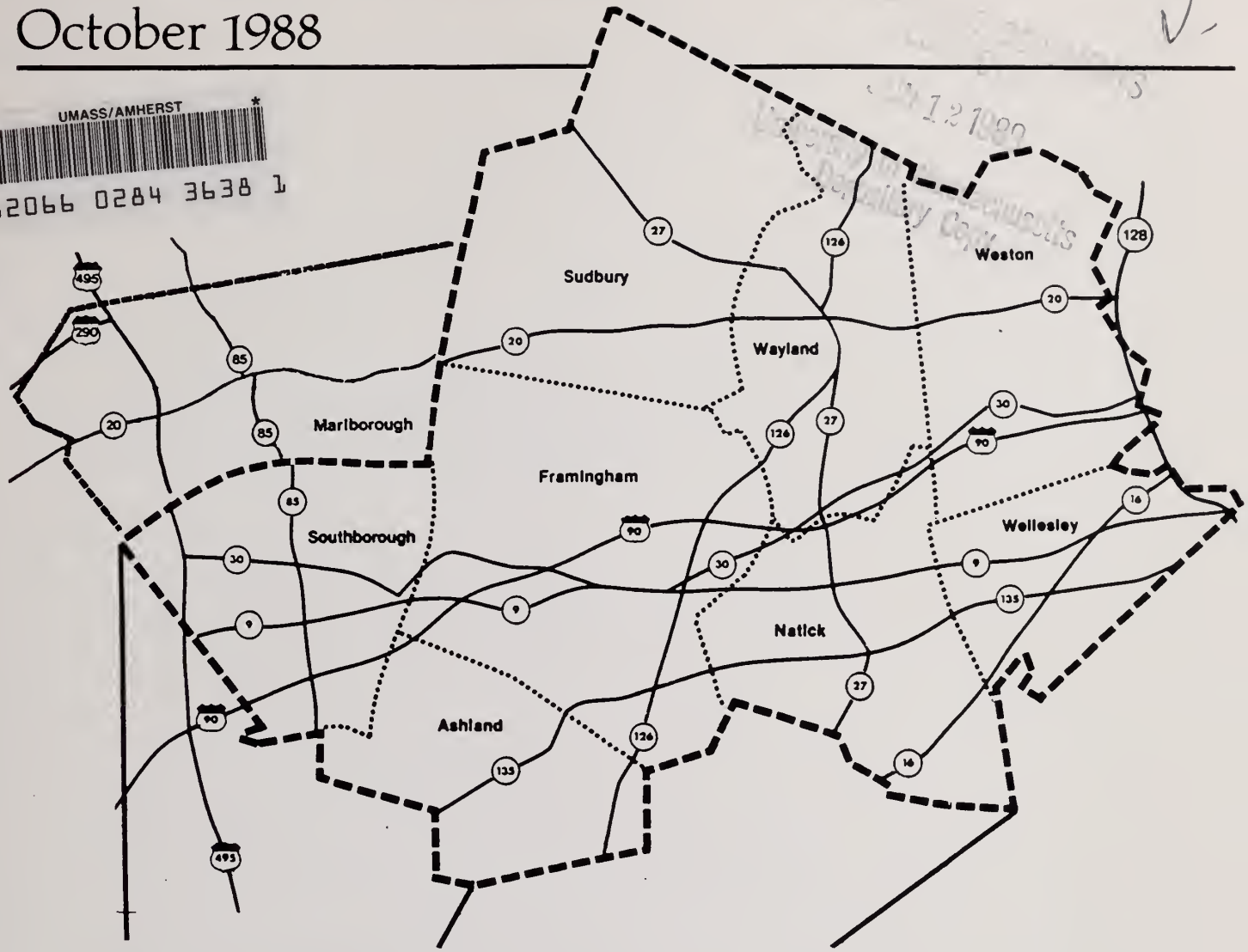
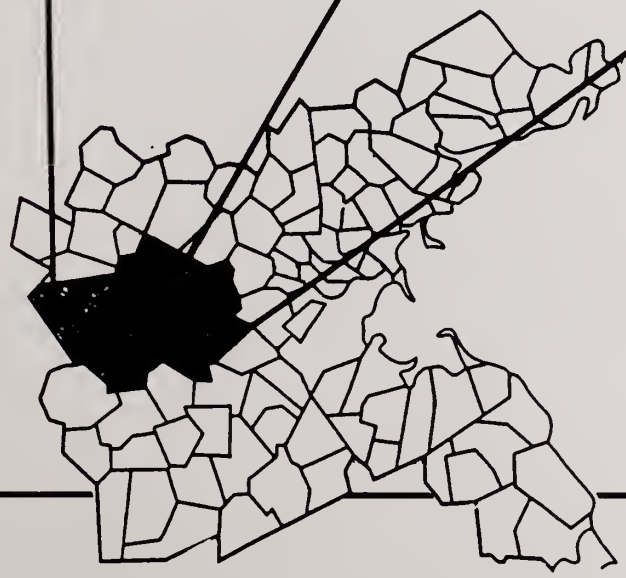
October 1988



MetroWest *Speed and Delay Study*

Update



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METROWEST SPEED AND DELAY STUDY UPDATE

EXECUTIVE SUMMARY

This report is a supplement to the 1986 MetroWest Speed and Delay Study prepared by the Metropolitan Area Planning Council (MAPC). It provides updated information about traffic improvements (public and private) in the MetroWest subregion, to be compared with the 1986 survey of congested locations. In addition, the city of Marlborough, now a member of the MetroWest group, has been included in the update - using information on traffic conditions available from recent traffic impact studies.

The objective of this supplement is to provide local officials with current information on the status of traffic improvements in relation to identified congested locations; thus giving a snap-shot of future transportation needs. It should be noted that safety problems and deteriorating road conditions need also play a part in programming transportation projects, although neither is addressed in this report.

Progress to Date

The 1986 report developed a regionwide perspective on traffic congestion through intensive data collection. Average speeds and delays for 223 miles of roadway including 175 intersections were measured. Intersection levels of service were assessed and mapped. The study found that, during the peak afternoon period, 49% of intersections were deficient while only 13% of highway miles were deficient. This indicated that major operational problems in MetroWest are a function of the reduced capacity at intersections rather than that of segments of roadway between intersections.

In 1986, excluding Marlborough, 86 intersections were identified as congested: having a level of service D or worse. Improvements were slated for 31% of the congested intersections identified in 1986, leaving 69% of congested intersections to be addressed at some later time. With the inclusion of Marlborough in our current analysis, the following table shows in a snapshot our progress to date:

Progress in Addressing Congested Locations

Intersections identified as congested in 1986 survey	86	
Intersections identified as congested in Marlborough in 1988	13	
Total number of intersections identified as congested	99	(100%)
-Those which have been improved since 1986	19	(19%)
-Those for which improvements are now proposed	25	(25%)
-Remainder - not yet proposed for improvement	55	(56%)
-Intersections in the above group of 56 which could be addressed with recommendation from one of four current corridor studies	19	

Although improvements in 1988 are slated for 31% of the remaining intersections identified as congested in 1986 (plus identified congested intersections in Marlborough), 55 congested intersections have no proposed improvements at this time. There may also be others which developed intersection capacity problems since the 1986 survey. For the seven worst intersections identified in 1986, two improvements have been completed, two improvements are proposed and three of the locations are not yet being addressed:

Those Improved since 1986
1) Route 27 @ Route 135 in Natick
2) Prospect St @ Chestnut Street in Ashland

Those proposed for improvements in 1988
3) Route 20 @ Union St in Sudbury
4) Speen St @ Route 30 in Framingham

Those yet to be Addressed
5) Route 30 @ Wellesley Rd in Weston
6) Route 135 @ Bishop St in Framingham
7) Route 126 @ Route 135 and Irving St in Framingham

Since 1986, 15 highway and 2 bridge projects have been completed (see Map 3). During the same period, 13 new highway projects (see Appendix A) and 4 bridge projects have been added to the list of proposed traffic improvements list including 4 corridor studies. The geographical areas of the corridor studies encompass 19 identified congested intersections, previously not addressed by proposed improvements. The following table summarizes proposed traffic improvements:

IMPROVEMENT PROJECTS PROPOSED IN 1988

	TOTAL NUMBER	PERCENT OF PROJECTS
TIP PROJECTS	15	37%
STATE/LOCAL PROJECTS	11	28%
STUDIES/UNAPPROVED PROJECTS	14	35%
TOTAL NUMBER OF PROJECTS	40	100%
THOSE ADDRESSING INTERSECTIONS IDENTIFIED AS CONGESTED IN 1986 (PLUS MARLBOROUGH)	20	50%

I. INTRODUCTION

The MetroWest Growth Management Committee mission is to address growth-related problems at the subregional level. The committee is comprised of a selectman and planning board member from each of the nine communities (i.e. Ashland, Framingham, Marlborough, Natick, Southborough, Sudbury, Wayland, Wellesley, and Weston) and the Executive Director of MAPC. MetroWest members work together to study problems and make recommendations for improvements from an areawide perspective.

One objective of the committee has been to develop an areawide perspective on traffic congestion. This has been accomplished through identification of congested locations, cataloguing their relative severity, and comparing these with an inventory of proposed traffic improvements. The original 1986 MetroWest Speed and Delay Study identified traffic hot spots and inventoried proposed traffic improvements. This data was then used to determine the extent to which proposed traffic improvement projects were addressing the most congested locations.

The MetroWest Speed and Delay Study Update provides a means for assessing progress in addressing congested locations in greatest need of transportation improvement from 1986 to present. This report only updates the inventory of traffic improvements and, except for Level of Service (LOS) data for Marlborough, does not update congestion analysis. Federal and state aid improvements were researched in the Transportation Improvement Program (TIP). Additional state and also local traffic improvements were determined through liaison efforts with local officials.

The analysis in this supplemental report culminates in three maps indicating: 1) Congested Intersections, 2) Traffic Improvements Proposed as of 1988, and 3) Projects Completed since 1986. The assumptions made in this report are outlined in the Methodology and Assumptions section of this report to clarify any differences with the previous work. Supporting information about completed projects, and proposed bridge projects, has been provided in the appendices.

II. METHODOLOGY AND ASSUMPTIONS

The focus of this report is on the maps showing congested intersections, proposed traffic improvements, and completed traffic projects. This report is a comparison of these; the analysis is detailed in the following sections.

A. Congested Intersections

Map 1, Congested Intersections, corresponds to data presented in Appendices A (Marlborough Congested Intersections) and B (the Intersection Analysis printout).

Marlborough Congested Intersections were researched in Environmental Impact Reports (EIR's) and through community liaison. A field study of speeds and delays has not been performed for Marlborough, which was not part of the MetroWest Committee at the time of the 1986 survey. Intersections identified as having Level of Service (LOS) D,E or F by an EIR are indicated on the Congested Intersections Map 1.

Appendix B, the Intersection Analysis printout lists delay information in LOS form which was researched for the 1986 report. The printout sorts data by town and intersection having LOS D,E, or F. The printout also indicates whether congested locations have been improved since 1986 or have proposed improvements in 1988. These intersections, as in the 1986 report, are shown on Map 1.

B. Proposed Traffic Improvements

Map 2, Proposed Traffic Improvements, corresponds to data presented in Table 1. These improvement projects are shown in three groups according to funding sources; (1) Transportation Improvement Program (TIP) projects, (2) state and locally funded projects, and (3) studies and unapproved projects. TIP projects are shown for locations which are on the federal aid highway classification system and are thereby eligible to receive federal and state funding and are listed in the TIP, the five year schedule of improvement projects. State and locally funded projects are initiated and/or funded by communities or the state. Studies and unapproved projects include community and state initiated corridor studies and potential projects which will be seeking funding in the near future. In addition there may be projects in any category which are jointly funded by private developments and the state or community. These are the main sources of funding by which congested intersections are mitigated and are the same categories used in the 1986 Speed and Delay Study.

The updated list of improvement projects was researched in the federal-aid TIP and through liaison with local officials. TIP projects in the nine communities were identified and tracked through the 1986, 1987, and 1988 TIPs. Table 1 indicates town, location, project type, TIP project number, funding responsibility, whether it is also a congested location and whether it was listed in the 1986 proposed improvements list. These traffic improvement projects are numbered for easy map reference.

C. Completed Transportation Improvement Projects Since 1986

Map 3, Completed Transportation Improvement Projects since 1986, corresponds to the list of projects in Appendix C. Projects are divided by funding category and numbered for easy map reference. This data gives an indication of progress towards traffic improvements for all congested intersections and has been used in tracking projects in Tables 2, 3, and 4.

D. Bridge Projects

This review also identified a number of bridge projects which were not included in the original report. These do not address capacity problems but are listed in Appendix D for a more comprehensive look at traffic improvements in the region.

E. Geographical Scope

The scope of this report has been expanded from eight to nine communities in order to include a new MetroWest member community, the city of Marlborough. LOS data for Marlborough intersections was obtained through a review of traffic studies from Environmental Impact Reports (EIR) for recent development proposals in Marlborough. The EIR data gives enough information to identify major problem locations for comparison with proposed improvement projects. This analysis could be refined by an analysis of speeds and delays at some future time.

III. ASSUMPTIONS

The following assumptions were made in order to establish a list of transportation improvement projects. These assumptions are provided below.

1) Projects slated for construction in the state/local funded and studies/unapproved projects categories, in 1986, are programmed as annual element projects and therefore assumed to be completed. It is the responsibility of either the Department of Public Works, or the municipality that will implement the project independently, to determine the schedule of their implementation. These projects are listed in Appendix C and are not included on the update of the proposed traffic improvement list.

2) Between the 1986 and 1988 TIP, there was some categorical shifting of projects. Some unapproved projects, having received a funding source, moved into either the federal, or state and local funded category. At least one project moved from the state and local funded category to the unapproved project category.

3) A number of congested intersections identified in the 1986 report may be addressed through mitigation proposed in the various ongoing and proposed corridor studies. Of the identified congested intersections, 19 are included within the four corridor studies on the Proposed Traffic

Improvement list; four within the Route 9 corridor, twelve within the Route 20 corridor, and three within the Route 85 corridor (none within the Route 30 corridor). Improvements within these corridors have not yet been formally proposed, but it is expected that some of these congested intersections will be improved as a result of corridor study recommendations.

IV. RESULTS

Overall, much progress has been made in addressing congested intersections in MetroWest. If the 40 projects proposed in 1988 are implemented, 44% of the intersections identified as congested in 1986, plus Marlborough, will have been improved. Furthermore, if the congested intersections included within the 4 corridor studies were to be improved, only 36 congested intersections would remain (36% of the intersections identified). It is interesting to note that, in 1988, 50% of the projects on the improvement list are addressing congestion as a priority.

In essence, by looking at congested roadways and intersections, we have attempted to establish transportation improvement priorities. However, it bears repeating that level of service is not, and should not be, the only criterion for priortizing transportation projects. The condition and safety of local roads are also important in the priortization process.

TABLE 1: Proposed Traffic Improvements

This table shows, by funding category, currently proposed traffic improvement projects. A star symbol next to the project name indicates that the project addresses a congested intersection identified by the 1986 report where as underlining indicates the project remains from the 1986 list of proposed traffic improvements. Note that a project in more than one community is listed for each of those communities with the same map identification number (these identification numbers reference the projects on Map 2).

In all, 40 projects are proposed. Of these 40 projects, twenty (7 in the TIP category, 3 in state and local category, and 10 in the studies and unapproved category) would address intersections identified as congested in 1986 (plus Marlborough). Since a proposed traffic improvement may address more than one congested intersection, a total of 25 identified congested intersections would be addressed by these 20 projects.

A comparative analysis of the 1986 congested intersections and the 1988 proposed improvement project lists and maps is summarized in Tables 2-4. The reader may note that there are more proposed traffic improvement projects for congested intersections in 1988 than there were in 1986. However, because many of the proposed improvements in 1986 addressed more than one congested intersection, it happens that more congested intersections were proposed for improvement in 1986 than are proposed in 1988. The information in the Tables is detailed below.

Table 2: Intersections Identified as Congested

This table is intended to track the congested intersections identified in the 1986 report. The table indicates the proportion of identified congested intersections which have been improved since 1986, are currently proposed for improvement, or remain to be addressed for each community in MetroWest. The number of identified congested intersections within corridor study areas is also listed. There has been good progress towards improving these congested locations. Projects since 1986 address 19% of the identified congested intersections while 25% would be addressed with current proposals. There are many more improvements needed to maintain and reconstruct failing intersections, 56% of those identified by the 1986 survey. However, as many as 19 of the remaining 55 intersections identified as congested in 1986 could be improved with recommendations from corridor studies underway at this time.

Table 3: Currently Proposed Improvement Projects

This table indicates that improvements are fairly equally distributed among the three funding categories and that half of the proposals address identified congestion problems. It is important to note that there may be more than one congested intersection addressed by an improvement project; alternatively the improvement project may not address a congested intersection at all. Improvement projects that do not target a congested intersection may instead address safety problems and/or deteriorating road conditions.

Of 40 identified traffic improvement projects proposed at this time, 38% will be funded through the TIP, 28% rely on state and local sources and 35% are identified as potential projects without a funding source. Half of the projects on the transportation improvement list are addressing congestion; clearly this has been a priority. As described previously, there may be a discrepancy between identified congested intersections improved and traffic improvement projects completed.

Table 4: A Comparison of Congested Intersections and Proposed Traffic Improvements

Generally, it was found that traffic improvements address more identified congested intersections now than in 1986 but that there is still a substantial number of identified congested intersections which need improvement. This table is set up to examine identified congested intersections separately from traffic improvements and to make comparisons not evident in the previous two tables.

Twenty-seven identified congested intersections were addressed in 1986 while 25 were proposed for improvement in 1988. Although fewer congested locations are proposed for improvement now than in 1986, an equal proportion of projects would address identified congested locations. Furthermore, current corridor studies could recommend improvements to address as many as 19 identified congested locations in the four corridors. In that case, 64% of all identified congested intersections would have been addressed.

The proposed traffic improvements section of the table indicates that there are 20 improvements proposed in 1988 compared with 18 in 1986. This indicates that there are more projects relevant to congestion on the improvements list now than in 1986; 43% of traffic improvements addressed congestion in 1986 compared to 50% in 1988. It appears that congestion has been the major criterion in establishing priority for traffic improvements.

It is evident, in reviewing the two sections of this table, that more traffic improvements are addressing identified congested intersections, however 69% of the remaining intersections identified as congested are still in need of improvement. This percentage is higher than one may expect due to the inclusion of 13 congested intersections for Marlborough.

CONCLUSION

This supplemental report to the 1986 MetroWest Speed and Delay Study is intended to give a snap-shot view of traffic problems and the status of plans to address those problems. This update reflects changes in the Transportation Improvement Program (TIP) and new projects planned by state and local sources as well as work completed since the original study. Since the city of Marlborough has recently joined MetroWest, the update has included for the first time problem locations identified in EIRs and their projected traffic improvements. This analysis has provided MetroWest with a current inventory of all planned transportation improvement projects for the subregion.

The comparison of congestion bottlenecks with proposed improvements this year shows that 55 of the intersections identified as congested in 1986 (plus congested intersections identified in Marlborough in 1988) have not yet been addressed. Although 19% were addressed since the 1986 survey and another 25% are currently slated for improvements, Marlborough offers 13 new locations, and traffic growth continues: there may be new problem locations not identified in the 1986 survey. Three of the most congested intersections in the subregion have yet to be targeted for improvements.

The multitude of congested intersections, along with other problem locations and real world limits on funding, mandate the efficient use of all available funds. Determining priorities among transportation improvement projects will be an important strategy for the future, to assure that those projects which are most critical to MetroWest are implemented.

These congested locations are often competing for limited transportation improvement funding. The multitude of projects combined with the limitations of existing funding make it desirable to use available funds as efficiently as possible. Determining priorities among transportation improvement projects may be one strategy to make the most efficient use of funding. Other strategies include the use of growth management tools to channel traffic growth with development, and the pursuit of alternative funding sources for these improvements.

At the present time, criteria for establishing transportation improvement priorities and selecting projects for construction are not clear. MAPC experience suggests that safety and road conditions, in addition to congested intersections and roadways, be included as important elements of criteria. When addressing the most congested intersections, transportation improvements should also include local road reconstruction, traffic signal updates, private development traffic improvement projects, as well as projects listed in the TIP. The comparison between 1986 and 1988 proposed traffic improvements in this supplement has provided a starting point for determining traffic improvement priorities.

MAPC has worked with MDPW, FHWA, and the Joint Regional Transportation Committee (JRTC) to develop traffic improvement priorities in the TIP. In 1988, the North Shore Transportation Task Force declared the need for transportation priorities, identified congested intersections and hazardous locations, and requested that MAPC collect available data for determining relative priorities.

Based on these data (largely traffic volumes and accident reports) the Task Force evaluated the various projects, polled local officials and developed a concensus on priorities to be submitted to the MDPW. The Task Force then proposed criteria to be considered in the preparation of the next TIP. Based on the experience in the North Shore, MetroWest could use the identification of congested intersections as an important first step in setting priorities. The identified congested intersections in this report coupled with the accident data and road conditions, plus a systematic priority-setting methodology, provide the groundwork for local officials to establish priorities in MetroWest.

TABLE 1
PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS IN 1988

FISCAL YEAR 1988-92 FEDERALLY FUNDED TIP PROJECTS

TOWN	LOCATION	PROJECT TYPE	PROJECT #
ASHLAND	NONE		
FRAMINGHAM	1)*ROUTE 126 @ ROUTE 30	RECONSTRUCTION	086450
	2)*ROUTE 30 @ SPEEN ST.	RECONSTRUCTION	086449
MARLBOROUGH	3)I-495 DIGITAL INTRCHNGE	CONSTRUCTION	063615
	4)I-290 @ I-495	BRIDGE RECONSTRUCTION	063601 063610
	5)*BOUNDARY ST.	RECONSTRUCTION	006870
	6)*FELTON ST.	RECONSTRUCTION	025012
	7)NEWTON @ GRANGER BLVD.	CONSTRUCT PARKING GAR'S	043505
NATICK	2)ROUTE 30 @ SPEEN ST.	RECONSTRUCTION	086449
SOUTHBOROUGH	8)I-495WESTBORO TO MARLBRO	RESURFACING	068510
	9)*FRAMINGHAM RD@ROUTE 85	RECONSTRUCTION	027007
	10)VALLEY @ BOSTON, FIRMIN @ PLEASANT	RECONSTRUCTION	026851
SUDBURY	11)*ROUTE 20@NOBSCOT,UNION	RECONSTRUCTION,SIGNALS	100800
	12)UNION AVE.@ CONCORD RD	TRAFFIC	132100
WAYLAND	13)*ROUTE 27 @ EAST/WEST PLAIN STREETS	RECONSTRUCTION	105120
WELLESLEY	14)ROUTE 128 FR ROUTE 24 TO ROUTE 9	RECONSTRUCTION	087800
WESTON	15)ROUTE 128,WESTON TO PEABODY	RECONSTRUCTION	088900

* = Projects addressing identified congested locations.
Underlined = Projects remaining from the 1986 list of proposed traffic improvements.

August 15, 1988

TABLE 1
PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS

STATE AND LOCALLY FUNDED PROJECTS

TOWN	LOCATION	PROJECT TYPE	FUNDING RESP.
ASHLAND	NONE		
FRAMINGHAM	16)*SAXONVILLE SQUARE: CENTRAL @ WATER ST.	TRAFFIC LIGHTS	STATE
	17)MODIFY 9/90 INTERCHANGE	RECONSTRUCTION	PRIVATE
	18)ROUTE 9, 4 LOCATIONS: SHOPPERS WORLD EAST AND WEST ROADS, CALDOR ROAD, DEAN ST (NATICK)	TRAFFIC SIGNAL	STATE-TIP**
MARLBOROUGH	19)ROUTE 85@MILL,MAPLE, WALKER ST.	SIGNALIZATION	CITY/STATE/
	20)LINCOLN ST CORRIDOR IMPRVMTS		CITY/STATE
	1989 CIP;INSPECT/REPLACE CITY LOOP DETECTORS		CITY
	21)ROUTE 20 @ HAGER ST AND FARM RD @ WILSON	INTRSCTION IMPRVMTS	STATE
NATICK	22)ROUTE 16	RECONSTRUCTION	STATE
SOUTHBOROUGH	NONE		
SUDBURY	LOW COST INTERSECTION IMPROVEMENTS THRU TOWN		TOWN
WAYLAND	23)SIX STREETS: RICE RD.,PINE BROOK RD., PLAIN RD.,CLAYPIT HILL RD., E.GLEZEN LANE,DRAPER RD.	RECONSTRUCTION	TOWN
	24)RICE RD.	OPEN SPACE PROGRAM	STATE-TIP**
	25)*ROUTE 30 @ RICE/OAK STS	SIGNALS,INTRSCTION IMPROVEMENTS	PRIVATE
WELLESLEY	26)*CENTRAL ST.(ROUTE 135) FR WESTON RD. TO WASHINGTON ST.(RT 16)	RECONSTRUCTION	TOWN
	ROUTE 9, 11 LOCATIONS	TRAFFIC SIGNAL	STATE-TIP**
	ROUTE 9 DRAINAGE IMPROVEMENTS		STATE-TIP**
WESTON	NONE		

* Projects addressing identified congested locations.
Underlined = Projects remaining from the 1986 list of proposed traffic improvements.
** These projects are listed in a special section of the TIP providing information on some state-funded projects.

August 15, 1988

TABLE 1

PROPOSED TRANSPORTATION IMPROVEMENT PROJECTS

STUDIES AND UNAPPROVED PROJECTS

TOWN	LOCATION	PROJECT TYPE	FUNDING RESP
ASHLAND	27)CORDAVILLE RD @ WINTER ST	CONSTRUCTION	STATE
	28)COMMUTER RAIL STA.	CONSTRUCT	STATE
FRAMINGHAM	29)FIVE LOCATIONS:	TRAFFIC SIGNAL	TOWN
	*ELM ST.@ POTTER RD,		
	*CONCORD ST.@ SCHOOL ST,		
	HOLLIS ST.@ WAUSHAKEUM,		
	*EDGELL RD.@ CENTRAL ST,		
	CONCORD ST.FIRE STATION		
	30)*ROUTE 9 CORRIDOR STUDY		STATE
MARLBOROUGH	31)*PARMENTER SQUARE:	INTERSECTION IMPRVMTS	PRIVATE
	@ E. MAIN,LINCOLN,STEVENS STS		
	32)*CITY FUNDED ROUTE 20 CORRIDOR STUDY		CITY
	32)MDPW FUNDED ROUTE 20 CORRIDOR STUDY		STATE
NATICK	33)SOUTH NATICK SQUARE	INTERSECTION IMPRVMTS	TOWN
	34)*HARTFORD @ SPEEN ST	INTERSECTION IMPRVMTS	STATE
	30)ROUTE 9 CORRIDOR STUDY		STATE
SOUTHBOROUGH	35)*ROUTE 30 CORRIDOR STUDY		TOWN
	36)*ROUTE 85 CORRIDOR STUDY		TOWN
	37)THREE INTERSECTIONS:	INTERSECTION IMPRVMTS	STATE?
	*FRAMINGHAM RD.@ ROUTE 30,		
	*ROUTE 30 @ CENTRAL ST,		
	FRAMINGHAM RD.@ NEWTON ST.		
	30)ROUTE 9 CORRIDOR STUDY		STATE
SUDBURY	32)TOWN FUNDED ROUTE 20 CORRIDOR STUDY		TOWN
	32)MDPW FUNDED ROUTE 20 CORRIDOR STUDY		STATE
	38)CODGER LANE CONSTRUCTION	MBTA ROW ACCESS TO RAYTHEON	PRIVATE
WAYLAND	32)MDPW ROUTE 20 CORRIDOR STUDY		STATE
	35)ROUTE 30 CORRIDOR STUDY		TOWN
	39)THREE LOCATIONS:	INTERSECTION IMPRVMTS	STATE
	*RT 30 @ OAK/RICE ST.,		
	*RT 30 @ SCHOOL/E.PLAIN ST.,		
	*RT 30 @ RT 27		
WELLESLEY	40)*WALNUT ST FR CEDAR ST TO ROUTE 16	RECONSTRUCTION	TOWN
	30)ROUTE 9 CORRIDOR STUDY		STATE
WESTON	32)MDPW ROUTE 20 CORRIDOR STUDY		STATE

* = Projects addressing identified congested locations.
Underlined = Projects remaining from the 1986 list of proposed traffic improvements.

August 15, 1988

TABLE 2

INTERSECTIONS IDENTIFIED AS CONGESTED (see APPENDIX B)

	ASHLAND	FRAMINGHAM	MARLBOROUGH	NATICK	SOUTHBOROUGH	SUDBURY	WAYLAND	WELLESLEY	WESTON	TOTAL	(PERCENT)
CONGESTED INTERSECTIONS	7	22	13	11	7	5	9	14	11	99	(100%)
LOCATIONS ADDRESSED SINCE 1986	6	2	0	2	0	1	0	8	0	19	(19%)
LOCATIONS FOR WHICH IMPROVEMENTS ARE PROPOSED (1988)	0	7	4	1	5	1	5	2	0	25	(25%)
REMAINING LOCATIONS (as yet not addressed)	1	13	9	8	2	3	4	4	11	55	(56%)
LOCATIONS INCLUDED IN CURRENT CORRIDOR STUDIES	0	1	8	1	4	1	1	0	3	19	

*Notes The inclusion of Marlborough in the MetroWest subregion has added 13 congested intersections to the total (86+13=99)

TABLE 3

CURRENTLY PROPOSED IMPROVEMENT PROJECTS

	TOTAL NUMBER	PERCENT OF PROJECTS
TIP PROJECTS	15	37%
STATE/LOCAL PROJECTS	11	28%
STUDIES/UNAPPROVED PROJECTS	14	35%
TOTAL NUMBER OF PROJECTS	40	100%
THOSE ADDRESSING CONGESTED INTERSECTIONS	20*	50%

Notes:
* In some cases, a proposed traffic project addresses more than one congested intersection (see Appendix C)

TABLE 4

A COMPARISON OF CONGESTED INTERSECTIONS AND PROPOSED TRAFFIC IMPROVEMENTS

IDENTIFIED CONGESTED INTERSECTIONS HAVING:	1986 #	%	1988 #	%
PROPOSED IMPROVEMENTS	27*	31%	25*	31%
NO PROPOSED IMPROVEMENTS	59	69%	55	69%
	86		80**	

PROPOSED IMPROVEMENTS WHICH:	1986 #	%	1988 #	%
ADDRESS CONGESTED INTERSECTIONS	18*	43%	20*	50%
ADDRESS OTHER PROBLEMS (possibly safety, road conditions etc.)	24	57%	20	50%
	42		40	

Notes:
* A proposed traffic improvement may address more than one congested intersection.

** The total number of congested intersections has increased with the inclusion of Marlborough and decreased by the number addressed since 1986: (86+13-19=80).

APPENDIX A

MARLBOROUGH CONGESTED INTERSECTIONS

LEVEL OF SERVICE	LOCATION
E	ROUTE 20 @ AMES ST.
E	ROUTE 20 @ BOUNDARY/HAYES MEMORIAL
F	ROUTE 20 @ CONCORD RD.
E	ROUTE 20 @ CURTIS AVE.
F	ROUTE 20 @ FELTON ST/MT.ROYAL ST.
E	ROUTE 20 @ HOSMER ST.
E	ROUTE 20 @ PETERS AVE.
E	ROUTE 20 @ PHELPS ST.
E	ROUTE 20 @ STEVENS ST.
F	ROUTE 20 @ WILLIAMS ST.
D	I-290 @ PLEASANT ST/FITCHBURG ST.
F	ROUTE 85 @ RESERVOIR ST. TO HUDSON ST.
E	ROUTE 85 @ UNION ST./HUDSON ST.

Sources:
1) Environmental Impact Reports:

PROJECT TITLE	EOEA #
Digital	6346
Marlborough Business Center	4774
Addition Hill	4499
Post Road Shopping Center	6421
Rout 9/90 Crossing	5723
Indian Hill	5839

2) Community Liaison

August 15, 1988

APPENDIX B: 1986 METROWEST SPEED AND DELAY INTERSECTION ANALYSIS 23-Aug-88

TOWN/CITY	INTERSECTION	MOVEMENT	PERIOD	LEVEL OF SERVICE	COMPLETED PROJECTS	PROPOSED PROJECTS
ASHLAND	CHESTNUT STREET at RT 135	Chestnut St northbound	AM peak	E	YES	
ASHLAND	FRONT STREET at MAIN STREET	Front St westbound	AM peak	E	YES	
ASHLAND	FRONT STREET at MAIN STREET	Front St westbound	PM peak	F	YES	
ASHLAND	MAIN STREET and CHESTNUT STREET	Main St southbound	AM peak	F	YES	
ASHLAND	MAIN STREET and CHESTNUT STREET	Chestnut St northbound	PM peak	D	YES	
ASHLAND	MAIN STREET and CHESTNUT STREET	Chestnut St southbound	PM peak	D	YES	
ASHLAND	MAIN STREET and CHESTNUT STREET	Chestnut St northbound	AM peak	F	YES	
ASHLAND	PLEASANT STREET at MAIN STREET	Pleasant St eastbound	AM peak	F	YES	
ASHLAND	RT 126 and ELIOT STREET	Rt 126 northbound	AM peak	F		
ASHLAND	RT 135 and MAIN STREET	Main St southbound	AM peak	F	YES	
ASHLAND	SUMMER STREET at RT 135	Summer St southwest bound	PM peak	F	YES	
FRAMINGHAM	CENTRAL STREET and WATER STREET	Central St westbound	AM peak	D		YES
FRAMINGHAM	CENTRAL STREET and WATER STREET	Water St eastbound	AM peak	D		YES
FRAMINGHAM	CENTRAL STREET at EDGELL ROAD	Central St westbound	AM peak	D		YES
FRAMINGHAM	CENTRAL STREET at EDGELL ROAD	Central St westbound	PM peak	F		YES
FRAMINGHAM	EDGELL ROAD at RT 9	Edgell Rd southbound	PM peak	E		ROUTE 9 C.S.
FRAMINGHAM	FOUNTAIN STREET and WINTER STREET	Fountain St eastbound	AM peak	D		
FRAMINGHAM	FOUNTAIN STREET at RT 135	Fountain St eastbound	AM peak	D		
FRAMINGHAM	FOXHILL ROAD at RT 30	Foxhill Rd southbound	AM peak	D		
FRAMINGHAM	MAIN STREET at UNION AVENUE	Union Ave northbound	PM peak	F		
FRAMINGHAM	OLD CONN PATH at SCHOOL STREET	Old Conn Path northbound	PM peak	E		YES
FRAMINGHAM	POTTER ROAD at ELM STREET	Potter Rd eastbound	PM peak	F		YES
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 135 eastbound	AM peak	F		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 126 northbound	AM peak	F		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 135 eastbound	PM peak	F		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 135 westbound	AM peak	D		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Irving St northbound	AM peak	F		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 135 westbound	PM peak	E		
FRAMINGHAM	RT 126, RT 135, and IRVING STREET	Rt 126 northbound	PM peak	F		
FRAMINGHAM	RT 126 and HARTFORD STREET	Hartford St westbound	AM peak	E		
FRAMINGHAM	RT 135, BISHOP, BEAVER	Beaver St westbound	PM peak	E		YES
FRAMINGHAM	RT 135, BISHOP, BEAVER	Rt 135 westbound	PM peak	F		YES
FRAMINGHAM	RT 135, BISHOP, BEAVER	Rt 135 westbound	AM peak	E		YES
FRAMINGHAM	RT 135, BISHOP, BEAVER	Bishop St southbound	PM peak	F		YES
FRAMINGHAM	RT 135, BISHOP, BEAVER	Rt 135 eastbound	PM peak	D		YES
FRAMINGHAM	RT 135, BISHOP, BEAVER	Bishop St southbound	AM peak	E		YES
FRAMINGHAM	RT 135 at WINTHROP STREET	Rt 135 eastbound	PM peak	F		
FRAMINGHAM	RT 30 and RT 126	Rt 126 northbound	PM peak	D		YES
FRAMINGHAM	RT 30 and RT 126	Rt 30 westbound	PM peak	E		YES
FRAMINGHAM	RT 30 and RT 126	Rt 30 eastbound	AM peak	D		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Speen St northbound	PM peak	E		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Rt 30 westbound	AM peak	F		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Rt 30 eastbound	PM peak	F		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Rt 30 eastbound	AM peak	F		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Rt 30 westbound	PM peak	E		YES
FRAMINGHAM	RT 30 and SPEEN STREET	Speen St southbound	PM peak	E		YES
FRAMINGHAM	RT 30 at BEACON STREET	Rt 30 westbound	AM peak	D		
FRAMINGHAM	RT 30 at SHOPPERS WORLD	Rt 30 westbound	PM peak	D		
FRAMINGHAM	RT 30 at SHOPPERS WORLD	Rt 30 westbound	AM peak	D		
FRAMINGHAM	SPEEN STREET at OLD CONN PATH	Speen St northbound	PM peak	F		
FRAMINGHAM	TEMPLE STREET at RT 9	Temple St southbound	AM peak	F	YES	
FRAMINGHAM	UNION AVENUE at CONCORD STREET	Union Ave southbound	PM peak	F		
FRAMINGHAM	WATER STREET and EDGELL ROAD	Water St westbound	PM peak	D		

APPENDIX B: 1986 METROWEST SPEED AND DELAY INTERSECTION ANALYSIS 23-Aug-88

TOWN/CITY	INTERSECTION	MOVEMENT	PERIOD	LEVEL OF SERVICE	COMPLETED PROJECTS	PROPOSED PROJECTS
FRAMINGHAM	WATER STREET and EDGELL ROAD	Edgell Rd southbound	AM peak	E		
FRAMINGHAM	WATER STREET and EDGELL ROAD	Edgell Rd northbound	AM peak	F		
FRAMINGHAM	WATER STREET and EDGELL ROAD	Edgell Rd southbound	PM peak	E		
FRAMINGHAM	WINTER ST at OLD SALEM END RD	Winter St northbound	AM peak	E	YES	
LINCOLN	RT 117 and RT 126	Rt 117 westbound	PM peak	F		
LINCOLN	RT 117 and RT 126	Rt 126 northbound	AM peak	D		
LINCOLN	RT 117 and RT 126	Rt 117 eastbound	AM peak	D		
LINCOLN	RT 117 at SUDBURY ROAD	Rt 117 eastbound	AM peak	D		
LINCOLN	RT 117 at SUDBURY ROAD	Rt 117 eastbound	PM peak	D		
NATICK	MILL STREET at HARTFORD STREET	Mill St northbound	PM peak	D	YES	
NATICK	MILL STREET at HARTFORD STREET	Mill St northbound	AM peak	D	YES	
NATICK	OAK STREET at RT 9	Oak St southbound	AM peak	F		ROUTE 9 I.S.
NATICK	OAK STREET at RT 9	Oak St southbound	PM peak	E		ROUTE 9 I.S.
NATICK	RT 135, UNION, MARION	Rt 135 westbound	AM peak	D		
NATICK	RT 135, UNION, MARION	Union St northbound	PM peak	E		
NATICK	RT 135, UNION, MARION	Marion St southbound	PM peak	F		
NATICK	RT 135, UNION, MARION	Rt 135 eastbound	AM peak	E		
NATICK	RT 135, UNION, MARION	Marion St southbound	AM peak	D		
NATICK	RT 135, UNION, MARION	Rt 135 eastbound	PM peak	F		
NATICK	RT 135 and MILL STREET	Mill St southbound	PM peak	D		
NATICK	RT 135 and SPEEN ST	Speen St northbound	PM peak	D		
NATICK	RT 27 and RT 135	Rt 135 westbound	PM peak	E	YES	
NATICK	RT 27 and RT 135	Rt 27 northbound	AM peak	F	YES	
NATICK	RT 27 and RT 135	Rt 27 southbound	PM peak	F	YES	
NATICK	RT 27 and RT 135	Rt 27 northbound	PM peak	D	YES	
NATICK	RT 27 and RT 135	Rt 135 eastbound	AM peak	F	YES	
NATICK	RT 27 and RT 135	Rt 135 westbound	AM peak	D	YES	
NATICK	RT 27 and RT 135	Rt 135 eastbound	PM peak	F	YES	
NATICK	RT 27 at BACON STREET	Rt 27 southbound	PM peak	E		
NATICK	RT 27 at EVERGREEN STREET	Rt 27 northbound	AM peak	D		
NATICK	RT 27 at WEST STREET	Rt 27 southbound	PM peak	F		
NATICK	SPEEN STREET and HARTFORD STREET	Speen St northbound	PM peak	D		YES
NATICK	SPEEN STREET and POND STREET	Speen St southbound	PM peak	D		
NATICK	SPEEN STREET and POND STREET	Pond St westbound	PM peak	E		
SOUTHBOROUGH	CENTRAL ST and OAK HILL ST (at RT 9)	Central St southbound	PM peak	E		ROUTE 9 I.S.
SOUTHBOROUGH	CENTRAL ST and OAK HILL ST (at RT 9)	Oak Hill St northbound	PM peak	E		ROUTE 9 I.S.
SOUTHBOROUGH	CENTRAL ST and OAK HILL ST (at RT 9)	Oak Hill St northbound	AM peak	F		ROUTE 9 I.S.
SOUTHBOROUGH	RT 30, FRAMINGHAM/WHITE BAGLEY RDS	Framingham Rd southbound	AM peak	F		YES
SOUTHBOROUGH	RT 30, FRAMINGHAM/WHITE BAGLEY RDS	Framingham Rd southbound	PM peak	F		YES
SOUTHBOROUGH	RT 30 and CENTRAL STREET	Central St northbound	AM peak	D		YES
SOUTHBOROUGH	RT 30 and CENTRAL STREET	Central St northbound	PM peak	E		YES
SOUTHBOROUGH	RT 30 and RT 85	Rt 85 southbound	PM peak	E		ROUTE 85 I.S.
SOUTHBOROUGH	RT 30 at RT 9 (eastern)	Rt 30 westbound	PM peak	E		YES
SOUTHBOROUGH	RT 85 and SOUTHVILLE ROAD	Rt 85 southbound	AM peak	F		ROUTE 85 I.S.
SOUTHBOROUGH	RT 85 at FRAMINGHAM ROAD	Rt 85 northbound	PM peak	E		ROUTE 85 I.S.
SOUTHBOROUGH	RT 85 at FRAMINGHAM ROAD	Rt 85 northbound	AM peak	E		ROUTE 85 I.S.
SUDBURY	DUTTON ROAD at HUDSON ROAD	Dutton Rd northbound	AM peak	F		
SUDBURY	NOBSCOT ROAD at RT 20	Rt 20 westbound (left turn)	PM peak	D		YES
SUDBURY	RT 20 and CONCORD ROAD	Rt 20 westbound	PM peak	F		ROUTE 27 I.S.
SUDBURY	RT 20 and CONCORD ROAD	Concord Rd southbound	PM peak	D		ROUTE 27 I.S.
SUDBURY	RT 20 and UNION STREET	Rt 20 eastbound	AM peak	D		YES
SUDBURY	RT 20 and UNION STREET	Union St southbound	PM peak	F		YES
SUDBURY	RT 20 and UNION STREET	Rt 20 westbound	PM peak	F		YES

APPENDIX B: 1986 METROWEST SPEED AND DELAY INTERSECTION ANALYSIS 23-Aug-88

TOWN/CITY	INTERSECTION	MOVEMENT	PERIOD	LEVEL OF SERVICE	COMPLETED PROJECTS	PROPOSED PROJECTS
SUDBURY	RT 27 and CONCORD ROAD	Concord Rd northbound	PM peak	F	YES	
SUDBURY	RT 27 and CONCORD ROAD	Concord Rd southbound	PM peak	D	YES	
WAYLAND	EAST PLAIN STREET at RT 30	East Plain St eastbound	AM peak	D		YES
WAYLAND	EAST/WEST PLAIN ST at RT 27	West Plain St eastbound	AM peak	D		YES
WAYLAND	EAST/WEST PLAIN ST at RT 27	East Plain St westbound	PM peak	E		YES
WAYLAND	OAK STREET at RT 30	Oak St northbound	PM peak	F		YES
WAYLAND	RICE ROAD at RT 30	Rice Rd southbound	AM peak	D		YES
WAYLAND	RT 126 at RT 27 (northern jct)	Rt 126 southbound	PM peak	D		
WAYLAND	RT 126 at RT 27 (northern jct)	Rt 126 southbound	AM peak	F		
WAYLAND	RT 20 and RT 27/126	Rt 126 northbound	AM peak	D		ROUTE 20 I.S.
WAYLAND	RT 20 and RT 27/126	Rt 20 westbound	AM peak	D		ROUTE 20 I.S.
WAYLAND	RT 20 and RT 27/126	Rt 27/126 southbound	AM peak	D		ROUTE 20 I.S.
WAYLAND	RT 20 and RT 27/126	Rt 27 northbound	PM peak	D		ROUTE 20 I.S.
WAYLAND	RT 27, RT 126 and OLD CONN PATH	Rt 126 northbound	AM peak	F		
WAYLAND	RT 27, RT 126 and OLD CONN PATH	Old Conn Path westbound	AM peak	D		
WAYLAND	RT 27, RT 126 and OLD CONN PATH	Rt 126 northbound	PM peak	D		
WAYLAND	RT 27 and RT 30	Rt 30 westbound	AM peak	E		YES
WAYLAND	RT 27 and RT 30	Rt 30 eastbound	PM peak	D		YES
WAYLAND	RT 27 and RT 30	Rt 27 northbound	PM peak	E		YES
WAYLAND	WEST PLAIN STREET at RT 126	West Plain St westbound	PM peak	F		
WELLESLEY	LINDEN STREET at KINGSBURY ST	Linden St westbound	PM peak	F		
WELLESLEY	LINDEN STREET at RT 135	Linden St westbound	PM peak	D		YES
WELLESLEY	OAKLAND ST at WELLESLEY AVE	Oakland St eastbound	PM peak	F		
WELLESLEY	RT 135, RT 16, and GROVE ST	Rt 135 eastbound	AM peak	E	YES	
WELLESLEY	RT 135, RT 16, and GROVE ST	Grove St northbound	PM peak	D	YES	
WELLESLEY	RT 135, RT 16, and GROVE ST	Rt 135 eastbound	PM peak	F	YES	
WELLESLEY	RT 135 and WESTON ROAD	Weston Rd southbound	PM peak	E		YES
WELLESLEY	RT 135 and WESTON ROAD	Weston Rd northbound	PM peak	D		YES
WELLESLEY	RT 16, FOREST, ROCKLAND, LINDEN ST	Forest St northbound	PM peak	E	YES	
WELLESLEY	RT 16, FOREST, ROCKLAND, LINDEN ST	Linden St eastbound	PM peak	D	YES	
WELLESLEY	RT 16, FOREST, ROCKLAND, LINDEN ST	Rockland St southbound	PM peak	E	YES	
WELLESLEY	RT 16, RT 135, and BROOK ST	Rt 135 eastbound	PM peak	D	YES	
WELLESLEY	RT 16 and CLIFF ROAD	Rt 16 westbound	AM peak	E	YES	
WELLESLEY	RT 16 at RT 128	Rt 16 westbound	AM peak	D	YES	
WELLESLEY	RT 16 at RT 128	Rt 16 eastbound	PM peak	E	YES	
WELLESLEY	RT 16 at RT 9 (EB)	Rt 16 westbound	PM peak	D	YES	
WELLESLEY	RT 16 at STATE STREET	Rt 16 eastbound	AM peak	D	YES	
WELLESLEY	WALNUT STREET at RT 128	Walnut St eastbound	PM peak	F		
WELLESLEY	WALNUT STREET at RT 16	Walnut St westbound	PM peak	E		YES
WELLESLEY	WALNUT STREET at RT 16	Walnut St westbound	AM peak	D		YES
WELLESLEY	WESTON ROAD at RT 16	Weston Rd southbound	PM peak	D	YES	
WESTON	ASH STREET at RT 30	Ash St southbound	PM peak	D		
WESTON	CONANT ROAD at RT 117	Conant Rd northbound	AM peak	D		
WESTON	HIGHLAND ST and POST RD (at RT 20)	Post Rd westbound	AM peak	E		ROUTE 20 I.S.
WESTON	HIGHLAND STREET at RT 30	Highland St southbound	AM peak	D		
WESTON	HIGHLAND STREET at RT 30	Highland St southbound	PM peak	E		
WESTON	NEWTON STREET at RT 30	Newton St southbound	AM peak	F		
WESTON	NEWTON STREET at RT 30	Newton St southbound	PM peak	E		
WESTON	RT 117 and CHURCH STREET	Rt 117 westbound	AM peak	E		
WESTON	RT 20, SCHOOL ST, and CONANT RD	School St northbound	AM peak	E		ROUTE 20 I.S.
WESTON	RT 20, SCHOOL ST, and CONANT RD	Rt 20 eastbound	AM peak	D		ROUTE 20 I.S.
WESTON	RT 20, SCHOOL ST, and CONANT RD	Conant Rd southbound	AM peak	E		ROUTE 20 I.S.
WESTON	RT 20, SCHOOL ST, and CONANT RD	School St northbound	PM peak	F		ROUTE 20 I.S.

APPENDIX B: 1986 METROWEST SPEED AND DELAY INTERSECTION ANALYSIS 23-Aug-88

TOWN/CITY	INTERSECTION	MOVEMENT	PERIOD	LEVEL OF SERVICE	COMPLETED PROJECTS	PROPOSED PROJECTS
WESTON	RT 20, SCHOOL ST, and DONANT RD	Donant Rd southbound	PM peak	E		ROUTE 20 U.S.
WESTON	RT 30 and WELLESLEY STREET	Rt 30 westbound	PM peak	F		
WESTON	RT 30 and WELLESLEY STREET	Wellesley St southbound	PM peak	F		
WESTON	RT 30 and WELLESLEY STREET	Rt 30 eastbound	AM peak	F		
WESTON	RT 30 and WELLESLEY STREET	Wellesley St southbound	AM peak	D		
WESTON	RT 30 and WELLESLEY STREET	Rt 30 westbound	AM peak	D		
WESTON	RT 30 and WELLESLEY STREET	Wellesley St northbound	AM peak	E		
WESTON	RT 30 and WELLESLEY STREET	Rt 30 eastbound	PM peak	D		
WESTON	RT 30 at RT 128	Rt 30 eastbound	AM peak	F		
WESTON	WELLESLEY ST and POST RD (at RT 20)	Wellesley St northbound	PM peak	F		ROUTE 20 U.S.
WESTON	WINTER STREET at RT 30	Winter St eastbound	PM peak	D		

APPENDIX C

TRANSPORTATION IMPROVEMENT PROJECTS COMPLETED SINCE 1986

TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
HIGHWAY PROJECTS

TOWN	LOCATION	PROJECT TYPE
ASHLAND	1)*CBD;MAIN ST.& PLEASANT ST.	RECONSTRUCTION
	2)5 LOCATIONS: *UNION @ SUMMER ST. *UNION @ MAIN ST. *UNION @ CHESTNUT ST. *UNION @ FOUNTAIN ST. *PROSPECT @ CHESTNUT ST.	INTERSECTION IMPRVMTS
FRAMINGHAM	3)*TEMPLE @ ROUTE 9	RECONSTRUCTION
	4)ROUTE 30 FR BURGER KING TO MASS.TURNPIKE EXIT #13	RECONSTRUCTION
	5)ROUTE 9 @ PROSPECT ST.	TRAFFIC SIGNALS
MARLBOROUGH	NONE	
NATICK	6)ROUTE 135; 3 LOCATIONS RT.135 @ KENDALL CROSSING *RT.135 @ RT.27 *HARTFORD @ MILL ST.	TRAFFIC SIGNALS
SOUTHBOROUGH	NONE	
SUDBURY	7) 3 LOCATIONS: (3 out of 4 COMPLETE) RT.20 @ PEAKHAM RD., CONCORD @ PANTRY RD., RT.117 @ HAYNES RD.	TRAFFIC SIGNALS
WAYLAND	NONE	
WELLESLEY	NONE	
WESTON	NONE	

BRIDGE PROJECTS

ASHLAND	HIGH ST. OVER RR	RECONSTRUCT
	HOWE ST. OVER SUDBURY RIVER	RECONSTRUCT

APPENDIX C

STATE AND LOCALLY FUNDED PROJECTS

ASHLAND	NONE	
FRAMINGHAM	8)*SALEM END RD.@ WINTER ST.	TRAFFIC SIGNAL
	9)ARTHUR ST.@ GRANT ST.	TRAFFIC SIGNAL
	10)CONCORD ST.@ WATSON ST.	TRAFFIC SIGNAL
MARLBOROUGH	NONE	
NATICK	11)HOFFMAN'S @ ROUTE 9	U-TURN RECONSTRUCT
SOUTHBOROUGH	NONE	
SUDBURY	12)MULTIPLE INTERSECTIONS: DUDLEY RD.@ NOBSCOT RD., HORSEPOND RD.@ ROUTE 20 DUDLEY RD.@ ROUTE 20 PRATTS MILL RD.@ WILLOW ST. PRATTS MILL RD.@ PEAKHAM RD. FAIRBANKS RD.@ HUDSON RD. PEAKHAM RD.@ HUDSON RD. CONCORD RD.@ CANDY HILL	MINOR IMPROVEMENTS
WAYLAND	13)STONE BRIDGE RD.	RECONSTRUCTION
WELLESLEY	NONE	
WESTON	NONE	

STUDIES AND UNAPPROVED PROJECTS

SUDBURY	14)*ROUTE 27 @ CONCORD RD.	INTERSECTION IMPRVMTS
WELLESLEY	15)*ROUTE 16 FR WESTON RD. TO NEWTON TOWN LINE (8 INTERSECTIONS)	

* = IDENTIFIED CONGESTED LOCATIONS

August 15, 1988

APPENDIX D

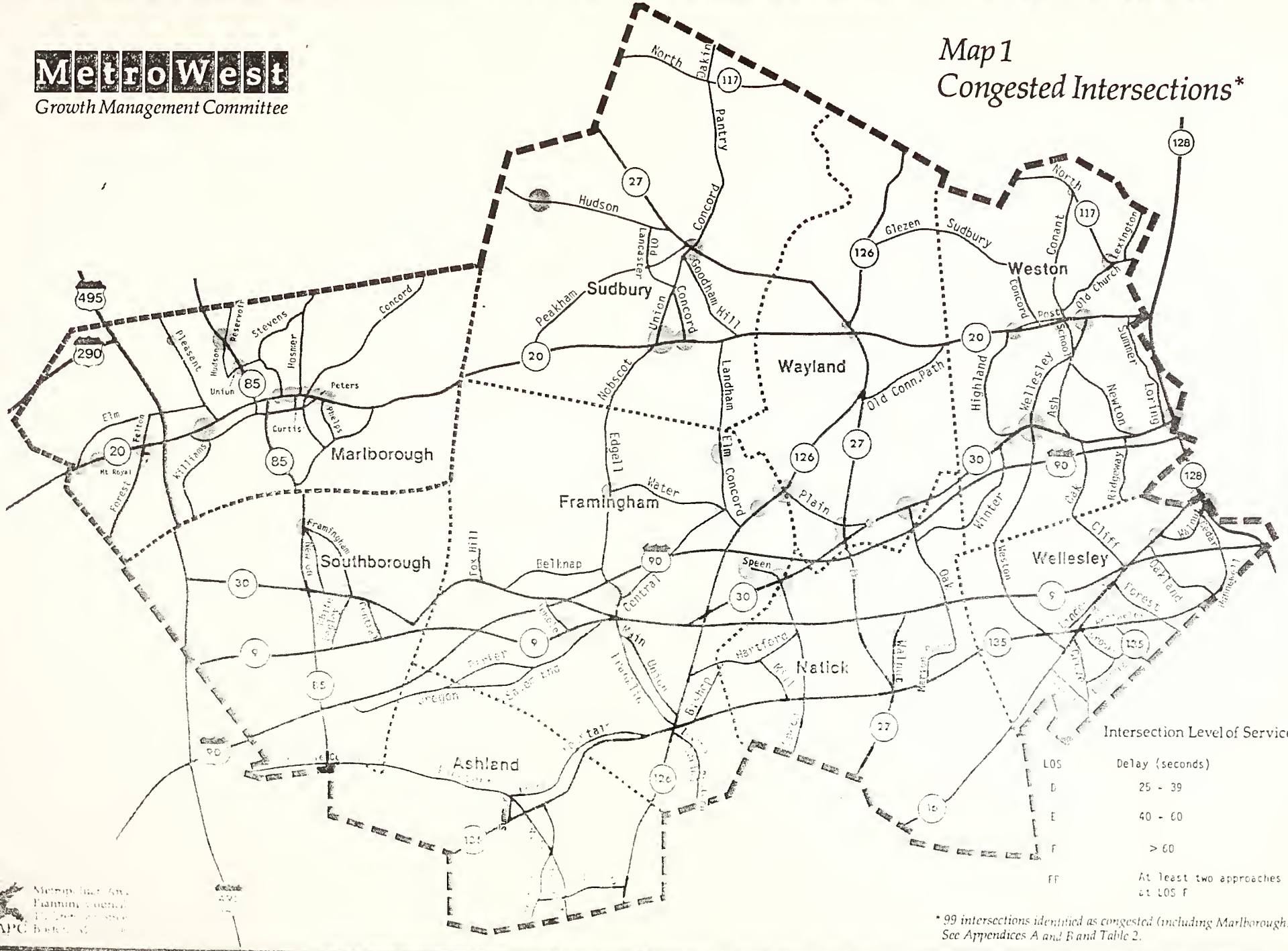
FISCAL YEAR 1988 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
BRIDGE PROJECTS

TOWN	LOCATION	PROJECT #
ASHLAND	HOWE ST.OVER RR AND SUDBURY R	034107
FRAMINGHAM	BOSTON RD.OVER ROUTE 9	006850
NATICK	BODEN LANE OVER CONRAIL	006251
	LOKER ST. OVER CONRAIL	039360
	MARION ST. OVER CONRAIL	043440
	N.MAIN ST. OVER CONRAIL	052160
	SPRING ST. OVER CONRAIL	126201
	WALNUT ST. OVER CONRAIL	137315
	WASHINGTON ST. OVER RR	139180
SOUTHBOROUGH	ROUTE 85,MARLBORO RD OVER RR	123330
	ROUTE 85 OVER ROUTE 9	123331
WAYLAND	ROUTE 20 OVER SUDBURY RIVER	105121
	SHERMAN BRIDGE ROAD	129110
WELLESLEY	CREST RD. OVER CONRAIL	036490
	GLEN RD.OVER CONRAIL	036475
	KINGSBURY ST. OVER CONRAIL	036500
	ROUTE 9 OVER CONRAIL	125299
	WESTON RD. OVER CONRAIL	141630
WESTON	SOUTH ST.IN WESTON/WALTHAM	130375
	CONCORD RD, CONANT RD.BRIDGES	STATE

August 15, 1988

MetroWest
Growth Management Committee

Map 1
*Congested Intersections**



* 99 intersections identified as congested (including Marlborough). See Appendices A and B and Table 2.

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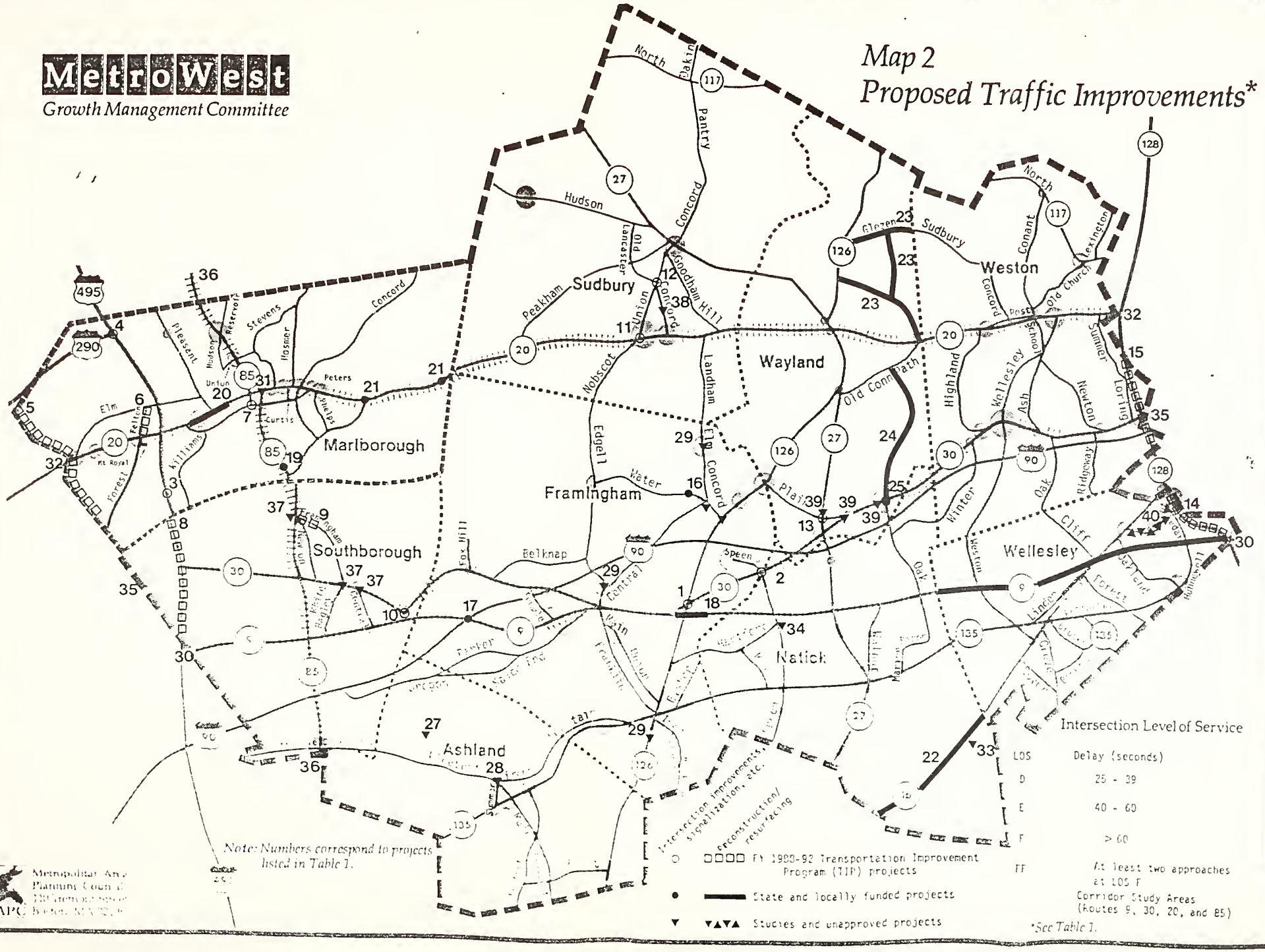
MetroWest
Growth Management Committee

Map 2
Proposed Traffic Improvements*



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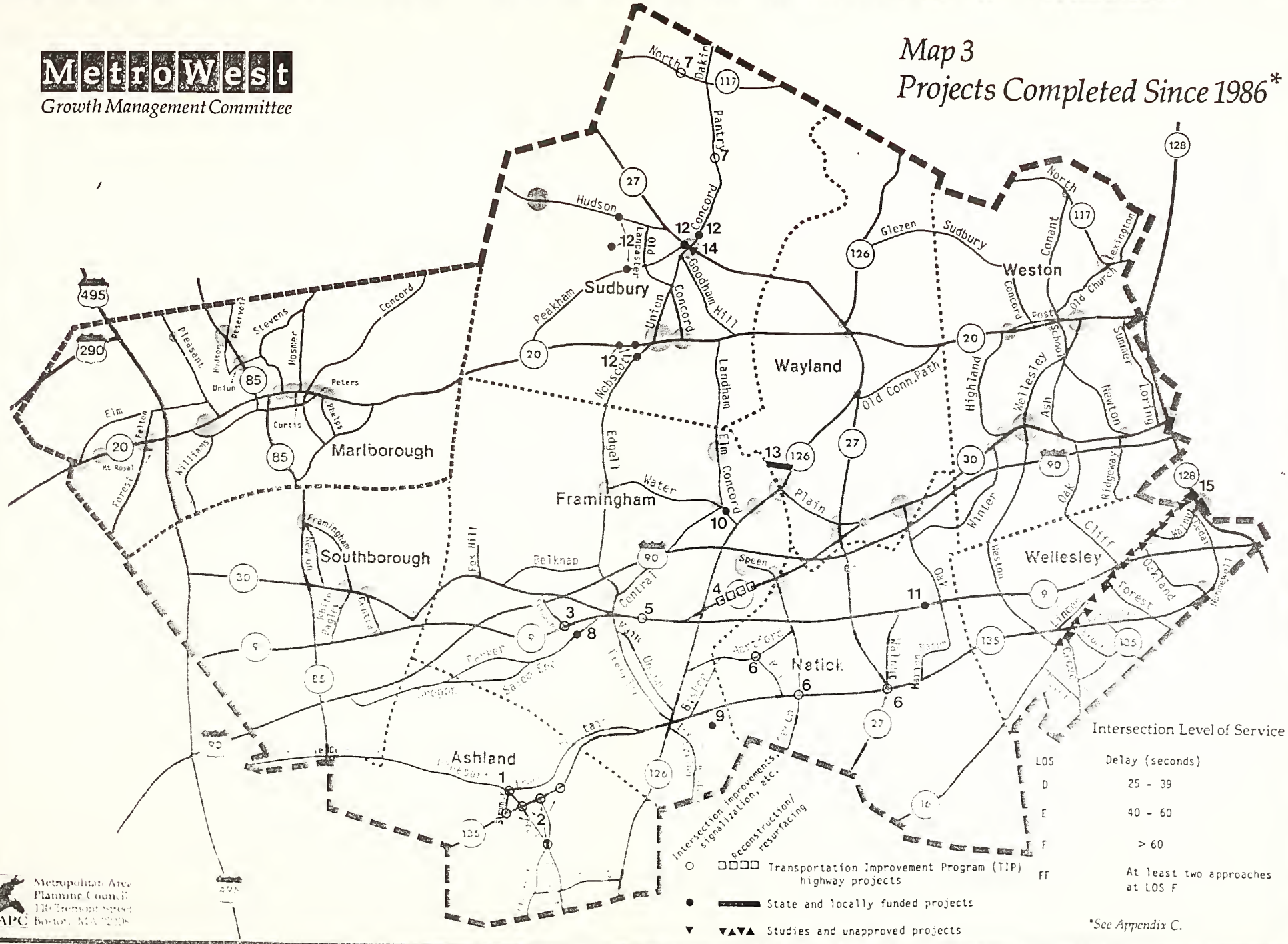
MetroWest
Growth Management Committee

Map 3
*Projects Completed Since 1986**



*See Appendix C.

Metropolitan Area Planning Council
MAPC